



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2017-1096; Product Identifier 2017-NM-072-AD; Amendment 39-19221; AD 2018-06-01]**

**RIN 2120-AA64**

**Airworthiness Directives; Airbus Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), Department of Transportation (DOT).

**ACTION:** Final rule.

**SUMMARY:** We are adopting a new airworthiness directive (AD) for certain Airbus Model A318, A319, A320, and A321 series airplanes; all Model A330-200 Freighter, -200, and -300 series airplanes; and all Model A340-200, -300, -500, and -600 series airplanes. This AD was prompted by reports of false traffic collision avoidance system (TCAS) resolution advisories. This AD requires modifying the software in the TCAS computer processor or replacing the TCAS computer with a new TCAS computer. We are issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** For service information identified in this final rule, contact Airbus, Airworthiness Office – EIAS, 1 Rond Point Maurice Bellonte, 31707 Blagnac Cedex, France; telephone +33 5 61 93 36 96; fax +33 5 61 93 44 51; email [account.airworth-eas@airbus.com](mailto:account.airworth-eas@airbus.com); Internet <http://www.airbus.com>. You may view this referenced service information at the FAA, Transport Standards Branch, 2200 South 216<sup>th</sup> St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-1096.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-1096; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (telephone 800-647-5527) is Docket Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Sanjay Ralhan, Aerospace Engineer, International Section, Transport Standards Section, FAA, 2200 South 216th St., Des Moines, WA 98198; telephone and fax 206-231-3223.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain Airbus Model A318, A319, A320, and A321 series airplanes; all Model A330-200 Freighter, -200, and -300 series airplanes; and all Model A340-200, -300, -500, and -600 series airplanes. The NPRM published in the Federal Register on November 30, 2017 (82 FR 56749) (“the NPRM”). The NPRM was prompted by reports of false TCAS resolution advisories. The NPRM proposed to require modifying the software in the TCAS computer processor or replacing the TCAS computer with a new TCAS computer. We are issuing this AD to prevent false TCAS resolution advisories. False TCAS resolution advisories could lead to a loss of separation with other airplanes, possibly resulting in a mid-air collision.

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Union, has issued EASA Airworthiness Directive 2017-0091R2, dated June 2, 2017 (referred to after this as the Mandatory Continuing Airworthiness Information, or “the MCAI”), to correct an unsafe condition for certain Airbus Model A318, A319, A320, and A321 series airplanes; all Model A330-200 Freighter, -200, and -300 series airplanes; and all Model A340-200, -300, -500, and -600 series airplanes. The MCAI states:

Since 2012, a number of false TCAS [traffic collision avoidance system] resolution advisories (RA) have been reported by various European Air Navigation Service Providers. EASA has published certification guidance material for collision avoidance systems (AMC 20-15) which defines a false TCAS RA as an RA that is issued, but the RA condition does not exist. It is possible that more false (or spurious) RA events have occurred, but were not

recorded or reported. The known events were mainly occurring on Airbus single-aisle (A320 family) aeroplanes, although several events have also occurred on Airbus A330 aeroplanes. Investigation determined that the false RAs are caused on aeroplanes with a certain Honeywell TPA-100B TCAS processor, P/N [part number] 940-0351-001, installed, through a combination of three factors: (1) hybrid surveillance enabled; (2) processor connected to a hybrid GPS source, without a direct connection to a GPS source; and (3) an encounter with an intruder aeroplane with noisy (jumping) ADS-B Out position.

EASA previously published Safety Information Bulletin (SIB) 2014-33 to inform owners and operators of affected aeroplanes about this safety concern. At that time, the false RAs were not considered an unsafe condition. Since the SIB was issued, further events have been reported, involving a third aeroplane.

This condition, if not corrected, could lead to a loss of separation with other aeroplanes, possibly resulting in a mid-air collision.

Prompted by these latest findings, and after review of the available information, EASA reassessed the severity and rate of occurrence of false RAs and has decided that mandatory action must be taken to reduce the rate of occurrence, and the risk of loss of separation with other aeroplanes.

Honeywell International Inc. published Service Bulletin (SB) 940-0351-34-0005 [Publication Number D201611000002] to provide instructions for an upgrade of TPA-100B processors P/N 940-0351-001 to P/N 940-0351-005, introducing software version 05/01.

Consequently, Airbus developed certain modifications (mod 159658 and mod 206608) and published SB A32034-1656, SB A320-34-1657, SB A330-34-3342, SB A340-34-4304 and SB A340-34-5118, to provide instructions for in-service introduction of the software update (including change to P/N 940-0351-005) on the affected aeroplanes, or to replace the TCAS processor with a P/N 940-0351-005 unit.

Consequently, EASA issued AD 2017-0091, to require modification or replacement of Honeywell TPA-100B TCAS P/N 940-0351-001 processors, hereafter referred to as ‘affected processor’ in this [EASA] AD. That [EASA] AD also prohibits installation of an affected processor on post-mod aeroplanes.

After that [EASA] AD was issued, it was found that an error had been introduced, inadvertently restricting the required action to those aeroplanes that had the affected part installed on the Airbus production line, thereby excluding those that had the part installed in-service by Airbus SB. Consequently, EASA revised AD 2017-0091 to amend Note 1 and include references to the relevant Airbus SBs that introduced the affected processor in service.

Since EASA AD 2017-0091R1 was issued, prompted by operator feedback and to avoid confusion, it was decided to exclude aeroplanes that had an affected processor installed by STC, for which EASA AD No.: 2017-0091R2 separate [EASA] AD action is planned. It was also determined that the prohibition to install an affected processor was too strict, particularly for Group 2 aeroplanes.

For the reason described above, this [EASA] AD is revised to reduce the Applicability, introduce some minor editorial changes and to amend paragraph (3).

You may examine the MCAI in the AD docket on the Internet at

<http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-1096.

## **Comments**

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the NPRM and the FAA’s response to each comment.

## **Supportive Comment**

The Air Line Pilots Association, International supported the NPRM.

### **Request to Refer to Revised Service Information**

Airbus requested that the NPRM be updated to reference the current revision level of certain service information. Airbus noted that four of the service bulletins referred to in the NPRM were revised.

We agree with the commenter's request. We have updated the preamble and paragraph (i) of this AD to refer to the revised service information. Because the revised service information does not include any additional actions, we have added paragraph (l) to this AD to provide credit for actions accomplished prior to the effective date of this AD using the applicable Airbus service bulletin identified in paragraphs (l)(1) through (l)(4) of this AD. We have redesignated subsequent paragraphs accordingly.

### **Conclusion**

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this AD with the changes described previously and minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

We also determined that these changes will not increase the economic burden on any operator or increase the scope of this AD.

## **Related Service Information under 1 CFR part 51**

Airbus has issued the following service information, which describes procedures for modifying the software in the TCAS computer processor and procedures for replacing the TCAS computer with a new TCAS computer. These documents are distinct since they apply to different airplane models in different configurations.

- Airbus Service Bulletin A320-34-1656, Revision 01, dated September 6, 2017.
- Airbus Service Bulletin A320-34-1657, Revision 01, dated September 6, 2017.
- Airbus Service Bulletin A330-34-3342, Revision 01, dated November 13, 2017.
- Airbus Service Bulletin A340-34-4304, dated April 19, 2017.
- Airbus Service Bulletin A340-34-5118, Revision 01, dated September 12, 2017.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

## **Costs of Compliance**

We estimate that this AD affects 205 airplanes of U.S. registry.

We estimate the following costs to comply with this AD:

<b>Estimated costs</b>				
<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
Software modification	2 work-hours X \$85 per hour = \$170	\$0	\$170	\$34,850
TCAS replacement	2 work-hours work-hours X \$85 per hour = \$170	\$298	\$468	\$95,940

## **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs," describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in "Subtitle VII, Part A, Subpart III, Section 44701: General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to transport category airplanes to the Director of the System Oversight Division.

## **Regulatory Findings**

We determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.



For the reasons discussed above, I certify that this AD:

1. Is not a “significant regulatory action” under Executive Order 12866,
2. Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
3. Will not affect intrastate aviation in Alaska, and
4. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

#### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

#### **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

#### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

**2018-06-01 Airbus:** Amendment 39-19221; Docket No. FAA-2017-1096; Product Identifier 2017-NM-072-AD.

#### **(a) Effective Date**

This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Airbus airplanes, all manufacturer serial numbers, certificated in any category, as identified in paragraphs (c)(1) through (c)(11) of this AD; except those Model A318, A319, A320 and A321 series airplanes that have been modified by a supplemental type certificate (STC) that installs Honeywell traffic alert and collision avoidance system (TCAS) 7.1 processor, part number (P/N) 940-0351-001.

(1) Model A318-111, -112, -121, and -122 airplanes.

(2) Model A319-111, -112, -113, -114, -115, -131, -132, and -133 airplanes.

(3) Model A320-211, -212, -214, -216, -231, -232, -233, -251N, and -271N airplanes.

(4) Model A321-111, -112, -131, -211, -212, -213, -231, -232, -251N, -253N, and -271N airplanes.

(5) Model A330-223F and -243F airplanes.

(6) Model A330-201, -202, -203, -223, and -243 airplanes.

(7) Model A330-301, -302, -303, -321, -322, -323, -341, -342, and -343 airplanes.

(8) Model A340-211, -212, and -213 airplanes.

(9) Model A340-311, -312, and -313 airplanes.

(10) Model A340-541 airplanes.

(11) Model A340-642 airplanes.

**(d) Subject**

Air Transport Association (ATA) of America Code 34, Navigation.

**(e) Reason**

This AD was prompted by reports of false TCAS resolution advisories. We are issuing this AD to prevent false TCAS resolution advisories, which could lead to a loss of separation with other airplanes, possibly resulting in a mid-air collision.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Definition of Group 1 and Group 2 Airplanes**

(1) For the purposes of this AD, Group 1 airplanes are those that have a Honeywell TPA-100B TCAS P/N 940-0351-001 processor that was installed during production, or in-service using the procedures in the applicable service information identified in paragraphs (g)(1)(i) through (g)(1)(xii) of this AD.

- (i) Airbus Service Bulletin A320-34-1504.
- (ii) Airbus Service Bulletin A320-34-1506.
- (iii) Airbus Service Bulletin A320-34-1533.
- (iv) Airbus Service Bulletin A320-34-1534.
- (v) Airbus Service Bulletin A320-34-1572.
- (vi) Airbus Service Bulletin A330-34-3247.
- (vii) Airbus Service Bulletin A330-34-3281.
- (viii) Airbus Service Bulletin A330-34-3344.
- (ix) Airbus Service Bulletin A340-34-4263.
- (x) Airbus Service Bulletin A340-34-4254.
- (xi) Airbus Service Bulletin A340-34-5076.
- (xii) Airbus Service Bulletin A340-34-5087.

(2) For the purposes of this AD, Group 2 airplanes are airplanes that do not have a Honeywell TPA-100B TCAS P/N 940-0351-001 processor installed.

**(h) Software Modification or TCAS Processor Replacement**

For Group 1 airplanes, as identified in paragraph (g)(1) of this AD: Within 12 months after the effective date of this AD, do a modification of the TCAS processor to upgrade the software, or replace the TCAS processor with a TCAS TPA-100B processor having P/N 940-0351-005, in accordance with the Accomplishment Instructions of the applicable service information identified in paragraph (i) of this AD.

Note 1 to paragraph (h) of this AD: Guidance for modifying an affected TCAS processor and re-identifying the processor as P/N 940-0351-005 can be found in paragraph 3.F. of Honeywell Service Bulletin 940-0351-34-0005, dated January 20, 2017.

**(i) Service Information for Accomplishment of Actions Specified in Paragraph (h) of this AD**

Use the applicable service information specified in paragraphs (i)(1) through (i)(5) of this AD to accomplish the actions required by paragraph (h) of this AD.

(1) For Model A318 and A319 series airplanes; Model A320-211, A320-212, A320-214, A320-216, A320-231, A320-232, and A320-233 airplanes; and Model A321 series airplanes: Airbus Service Bulletin A320-34-1656, Revision 01, dated September 6, 2017.

(2) For Model A320-251N and Model A320-271N airplanes: Airbus Service Bulletin A320-34-1657, Revision 01, dated September 6, 2017.

(3) For Model A330-200, A330-200 Freighter, and A330-300 series airplanes: Airbus Service Bulletin A330-34-3342, Revision 01, dated November 13, 2017.

(4) For Model A340-200 and A340-300 series airplanes: Airbus Service Bulletin A340-34-4304, dated April 19, 2017.

(5) For Model A340-500 and A340-600 series airplanes: Airbus Service Bulletin A340-34-5118, Revision 01, dated September 12, 2017.

**(j) Identification of Airplanes that do not have a Honeywell TPA-100B TCAS P/N 940-0351-001 Processor Installed**

An airplane on which Airbus modification 159658 or Airbus modification 206608, as applicable, has been embodied in production and on which it can be positively determined that no TCAS processor has been replaced or modified on that airplane since its date of manufacture is a Group 2 airplane, as identified in paragraph (g)(2) of this AD. Group 2 airplanes are not affected by the requirements of paragraph (h) of this AD. A review of airplane maintenance records is acceptable to make this determination, provided those records can be relied upon for that purpose and that the TCAS processor part number and software standard can be positively identified from that review.

**(k) Parts Installation Prohibition**

Installation of a Honeywell TCAS TPA-100B processor having P/N 940-0351-001 is prohibited, as required by paragraphs (k)(1) and (k)(2) of this AD.

(1) For Group 1 airplanes, as identified in paragraph (g)(1) of this AD: After modification of an airplane as required by paragraph (h) of this AD.

(2) For Group 2 airplanes, as identified in paragraph (g)(2) of this AD: As of the effective date of this AD.

**(l) Credit for Previous Actions**

This paragraph provides credit for the actions required by paragraph (h) of this AD, if those actions were performed before the effective date of this AD using the

Accomplishment Instructions of the applicable Airbus service bulletin identified in paragraphs (l)(1) through (l)(4) of this AD.

(1) Airbus Service Bulletin A320-34-1656, dated April 19, 2017.

(2) Airbus Service Bulletin A320-34-1657, dated April 19, 2017.

(3) Airbus Service Bulletin A330-34-3342, dated April 19, 2017.

(4) Airbus Service Bulletin A340-34-5118, dated April 19, 2017.

**(m) Other FAA AD Provisions**

The following provisions also apply to this AD:

**(1) Alternative Methods of Compliance (AMOCs):** The Manager, International Section, Transport Standards Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the International Section, send it to the attention of the person identified in paragraph (n)(2) of this AD. Information may be emailed to: 9-ANM-116-AMOC-REQUESTS@faa.gov. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

**(2) Contacting the Manufacturer:** For any requirement in this AD to obtain corrective actions from a manufacturer, the action must be accomplished using a method approved by the Manager, International Section, Transport Standards Branch, FAA; or the European Aviation Safety Agency (EASA); or Airbus's EASA Design Organization

Approval (DOA). If approved by the DOA, the approval must include the DOA-authorized signature.

**(3) Required for Compliance (RC):** If any service information contains procedures or tests that are identified as RC, those procedures and tests must be done to comply with this AD; any procedures or tests that are not identified as RC are recommended. Those procedures and tests that are not identified as RC may be deviated from using accepted methods in accordance with the operator's maintenance or inspection program without obtaining approval of an AMOC, provided the procedures and tests identified as RC can be done and the airplane can be put back in an airworthy condition. Any substitutions or changes to procedures or tests identified as RC require approval of an AMOC.

**(n) Related Information**

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) EASA Airworthiness Directive 2017-0091R2, dated June 2, 2017, for related information. This MCAI may be found in the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-1096.

(2) For more information about this AD, contact Sanjay Ralhan, Aerospace Engineer, International Section, Transport Standards Branch, FAA, 2200 South 216th St., Des Moines, WA 98198; telephone and fax 206-231-3223.

(3) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (o)(3) and (o)(4) of this AD.

**(o) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(i) Airbus Service Bulletin A320-34-1656, Revision 01, dated September 6, 2017.

(ii) Airbus Service Bulletin A320-34-1657, Revision 01, dated September 6, 2017.

(iii) Airbus Service Bulletin A330-34-3342, Revision 01, dated November 13, 2017.

(iv) Airbus Service Bulletin A340-34-4304, dated April 19, 2017.

(v) Airbus Service Bulletin A340-34-5118, Revision 01, dated September 12, 2017.

(3) For service information identified in this AD, contact Airbus SAS, Airworthiness Office – EAL, 1 Rond Point Maurice Bellonte, 31707 Blagnac Cedex, France; telephone +33 5 61 93 36 96; fax +33 5 61 93 45 80; email [airworthiness.A330-A340@airbus.com](mailto:airworthiness.A330-A340@airbus.com); Internet <http://www.airbus.com>.

(4) You may view this service information at the FAA, Transport Standards Branch, 2200 South 216<sup>th</sup> St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.



(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to:

<http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Renton, Washington, on March 2, 2018.

Michael Kaszycki,  
Acting Director,  
System Oversight Division,  
Aircraft Certification Service.

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